Notice of Allowability	Application No.	Applicant(s)	
	10/791,858	NARUMI ET AL.	
	Examiner	Art Unit	
	Julie Anne Watko	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed after final on 03/06/2006 and the notice of appeal filed 04/05/2006*.

2. ☒ The allowed claim(s) is/are *15,17-20 and 25*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☒ Certified copies of the priority documents have been received in Application No. *09/811,437*.
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *04222006*.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Paul Skwierawski (Reg. No. 32173) on April 20, 2006.

The application has been amended as follows:

Page 12, lines 1-3 of the specification have been changed to --As in this embodiment, the magnetic pole tip layer 11 [is formed on] includes the magnetic gap layer 10 [and] formed on the non-magnetic step layer.--.

On page 3, line 20 of the specification, "FIG. 1 is" has been changed to --FIGS. 1(a)-(b) are [is]--.

On page 3, line 22 of the specification, "FIG. 2 is a contour line diagram" has been changed to -- FIGS. 2(a)-(d) are [is a] contour line diagrams --.

On page 3, line 26 of the specification, "FIG. 3 is a diagram" has been changed to -- FIGS. 3(a)-(d') are [is a] diagrams --.

On page 4, line 1 of the specification, "FIG. 4 is a cross-sectional view" has been changed to -- FIGS. 4(a)-(b) are [is a] cross-sectional views --.

On page 4, line 4 of the specification, "FIG. 5 is a cross-sectional view" has been replaced by -- FIGS. 5(a)-(b) are [is a] cross-sectional views --.

On page 4, line 7 of the specification, "FIG. 6 is a cross-sectional view" has been replaced by -- FIGS. 6(a)-(b) are [is a] cross-sectional views --.

On page 4, line 17 of the specification, "FIG. 1 is a model diagram" has been changed to -- FIGS. 1(a)-(b) are [is a] model diagrams --.

On page 9, line 23 of the specification, "FIG. 3 shows" has been changed to -- FIGS. 3(a)-(d') show[s] --.

On page 11, line 4 of the specification, "FIG. 1" has been changed to -- FIGS. 1(a)-(b)--.

On page 13, line 24 of the specification, "FIG. 6 shows a cross-sectional view" has been changed to -- FIGS. 6(a)-(b) show[s a] cross-sectional views --.

On page 13, line 26 of the specification, "FIG. 6" has been changed to -- FIGS. 6(a)-(b)--.

Claims 1-14, 16 and 21-24 have been cancelled.

Claim 15 has been changed to --A magnetic disk apparatus comprising a magnetic recording media, a motor to drive the magnetic recording media, a magnetic head to read from and write onto the magnetic recording media, and a mechanism for positioning the magnetic head, wherein at least one inductive head [according to claim 3] is mounted as the magnetic head, said inductive head comprising a lower magnetic core formed on a substrate, a magnetic pole tip layer formed on the lower magnetic core wherein said magnetic pole tip layer comprises three layers of magnetic layer/non-magnetic layer/magnetic layer, an upper magnetic core coupled in its front end to the magnetic pole tip layer, coupled in its rear end to the lower magnetic core, having a width of the front end smaller than that of the rear end, and having at least partially a shape gradually reducing the width from the rear end to the front end, coils disposed between the upper magnetic core and the lower magnetic core, and an insulating layer

formed between the coils and the upper magnetic core or the lower magnetic core, wherein the distance between the upper magnetic core and the lower magnetic core in a rear end region away from an air bearing surface in a region connecting the magnetic pole tip layer to said upper magnetic core is shorter than the distance between the top surface of said magnetic pole tip layer in the air bearing surface and said lower magnetic core, and wherein a width of the front end of the upper magnetic core is larger than that of a rear end of the magnetic pole tip layer, a width of the magnetic pole tip layer of said magnetic head in the air bearing surface is not more than 0.5 μm, a saturation magnetic flux density of the magnetic layer consisting of the magnetic pole tip layer is not less than 1.6T, and a coercivity of the magnetic recording media is 317 to 634 kA/m (4.0 to 8.0 kOe), and said three layers of magnetic layer/non-magnetic layer/magnetic layer of said magnetic pole tip layer have the same shape as viewed from top, and have an angle of extension of 5° to 45°.--.

Claim 17 has been changed to --The magnetic disk apparatus according to claim 15, comprising a magnetic gap layer formed at least near the air bearing surface on said lower magnetic core, a non-magnetic layer formed in a region such that at least the magnetic gap layer is distanced from the air bearing surface and having a thickness increased with moving away from the air bearing surface, and said magnetic pole tip layer is formed on [the magnetic gap layer and] the non-magnetic layer.--.

Claim 25 has been changed to --An inductive head comprising a lower magnetic core formed on a substrate, a magnetic pole tip layer formed on the lower magnetic core wherein said magnetic pole tip layer comprises three layers of magnetic layer/non-magnetic layer/magnetic layer, an upper magnetic core coupled in its front end to the magnetic pole tip layer, coupled in

its rear end to the lower magnetic core, having a width of the front end smaller than that of the rear end, and having at least partially a shape gradually reducing the width from the rear end to the front end, coils disposed between the upper magnetic core and the lower magnetic core, and an insulating layer formed between the coils and the upper magnetic core or the lower magnetic core, wherein the distance between the upper magnetic core and the lower magnetic core in a rear end region away from an air bearing surface in a region connecting the magnetic pole tip layer to said upper magnetic core is shorter than the distance between the top surface of said magnetic pole tip layer in the air bearing surface and said lower magnetic core, and wherein a width of the front end of the upper magnetic core is larger than that of a rear end of the magnetic pole tip layer, wherein said three layers of magnetic layer/non-magnetic layer/magnetic layer of said magnetic pole tip layer have the same shape as viewed from top, and have an angle of extension of 5° to 45°.--.

2. The following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests any motivation for arriving at the specifically claimed shape of the three layers of magnetic layer/non-magnetic layer/magnetic layer, in combination with the three layers having the same shape, in combination with all other recited limitations, absent hindsight reasoning.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on T11A-5PW3P-9PTh11:30A-10PF10A-8:30PSatNoon-8:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko
Primary Examiner
Art Unit 2627

April 23, 2006
JAW